

A2 concluded
the laser beam can be directed to the back sides of the tines by other means such as mirrors, or by turning the tuning fork over.

Amend Page 6, lines 18 - 24 to read as follows:

A3 It is not necessary that the two tines be substantially equal in mass and stiffness prior to adjustment for quadrature offset. If there is an imbalance between the tines, either by design or by errors in fabrication, that imbalance can be corrected by first trimming the mass on one of the tines to eliminate the imbalance, and then trimming equally from both tines for subsequent adjustment. In this way, an inherently asymmetric fork can be corrected as part of the quadrature reduction and frequency adjustment process.

IN THE CLAIMS

Amend the Claims to read as follows:

A1 A2 A3 B1 B2 B3 B4 B5 B6 B7 B8 B9 B10 B11 B12 B13 B14 B15 B16 B17 B18 B19 B20 B21 B22 B23 B24 B25 B26 B27 B28 B29 B30 B31 B32 B33 B34 B35 B36 B37 B38 B39 B40 B41 B42 B43 B44 B45 B46 B47 B48 B49 B50 B51 B52 B53 B54 B55 B56 B57 B58 B59 B60 B61 B62 B63 B64 B65 B66 B67 B68 B69 B70 B71 B72 B73 B74 B75 B76 B77 B78 B79 B80 B81 B82 B83 B84 B85 B86 B87 B88 B89 B90 B91 B92 B93 B94 B95 B96 B97 B98 B99 B100
4. In a method of manufacturing a tuning fork for use in an inertial rate sensor, the steps of: forming a pair of elongated tines which have front and rear surfaces and are disposed symmetrically about an axis, and using balancing masses on the front surface of one tine and the rear surface of the other tine to eliminate quadrature displacement in the tines while maintaining a balance in mass between the tines.

5. The method of Claim 4 wherein quadrature displacement is eliminated and mass balance is maintained by applying mass elements to the tines, and removing portions of the mass elements from the front surface of one tine and from the rear surface of the other.

6. The method of Claim 4 wherein quadrature displacement is eliminated and mass balance is maintained by adding mass elements to the front surface of one tine and the rear surface of the other tine.

7. In a method of manufacturing a tuning fork for use in an inertial rate sensor, the steps of: forming a pair of elongated tines having free ends of increased lateral dimension with laterally offset balancing masses on opposite sides of the tines near

the free ends, and adjusting the balancing masses on opposite sides of the two tines to eliminate quadrature displacement in the tines while maintaining a balance in mass between the tines.

8. The method of Claim 7 wherein the balancing masses are adjusted by removing substantially equal amounts of them from the opposite sides of the two tines.

9. The method of Claim 7 wherein the tines are fabricated of a material which is transparent to a laser beam, and the balancing mass on one side of one of the tines is trimmed by passing the laser beam through the tine to the balancing mass.

10. The method of Claim 7 further including the step of removing substantially equal amounts of the balancing masses from same sides of the tines to adjust the drive mode frequency of the tuning fork.

A4
11. In a method of manufacturing a tuning fork for use in an inertial rate sensor, the steps of: forming an elongated pair of drive tines having front and rear surfaces, forming a pair of pickup tines having front and rear surfaces, applying balancing masses to the front and rear surfaces of the drive tines, and trimming the balancing masses on opposite sides of the drive tines to eliminate quadrature displacement without affecting mass balance between the drive tines.

12. The method of Claim 11 further including the step of trimming the masses on same sides of the drive tines to adjust the drive mode frequency of the tuning fork.

13. The method of Claim 11 further including the steps of providing masses on the pickup tines, and trimming the masses on the pickup tines to adjust the pickup mode frequency of the tuning fork.

A5
14. In a method of manufacturing a tuning fork for use in an inertial rate sensor, the steps of: forming a pair of elongated tines which have front and rear surfaces and are disposed symmetrically about an axis, applying balancing masses to the front and rear surfaces of the tines, trimming the balancing masses if necessary to provide a balance in mass between the two tines, and thereafter removing substantially equal amounts of the balancing masses from the front surface of one of the tines and from